

**HIGH- ENERGY
ACTIVITY
AT THE GALACTIC
CENTER**

Sgr D SNR

SNR 0.9+0.1

20 cm

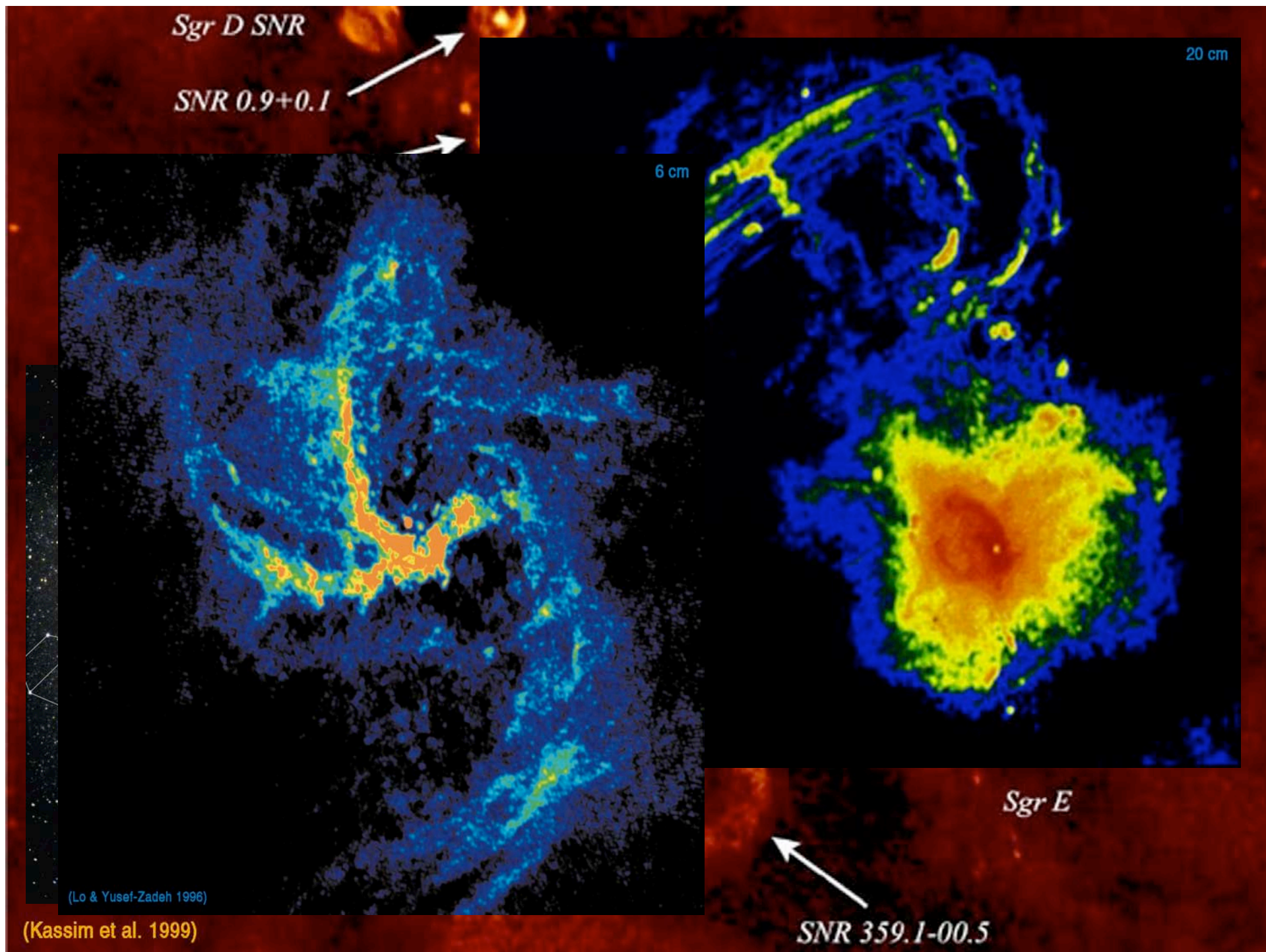
6 cm

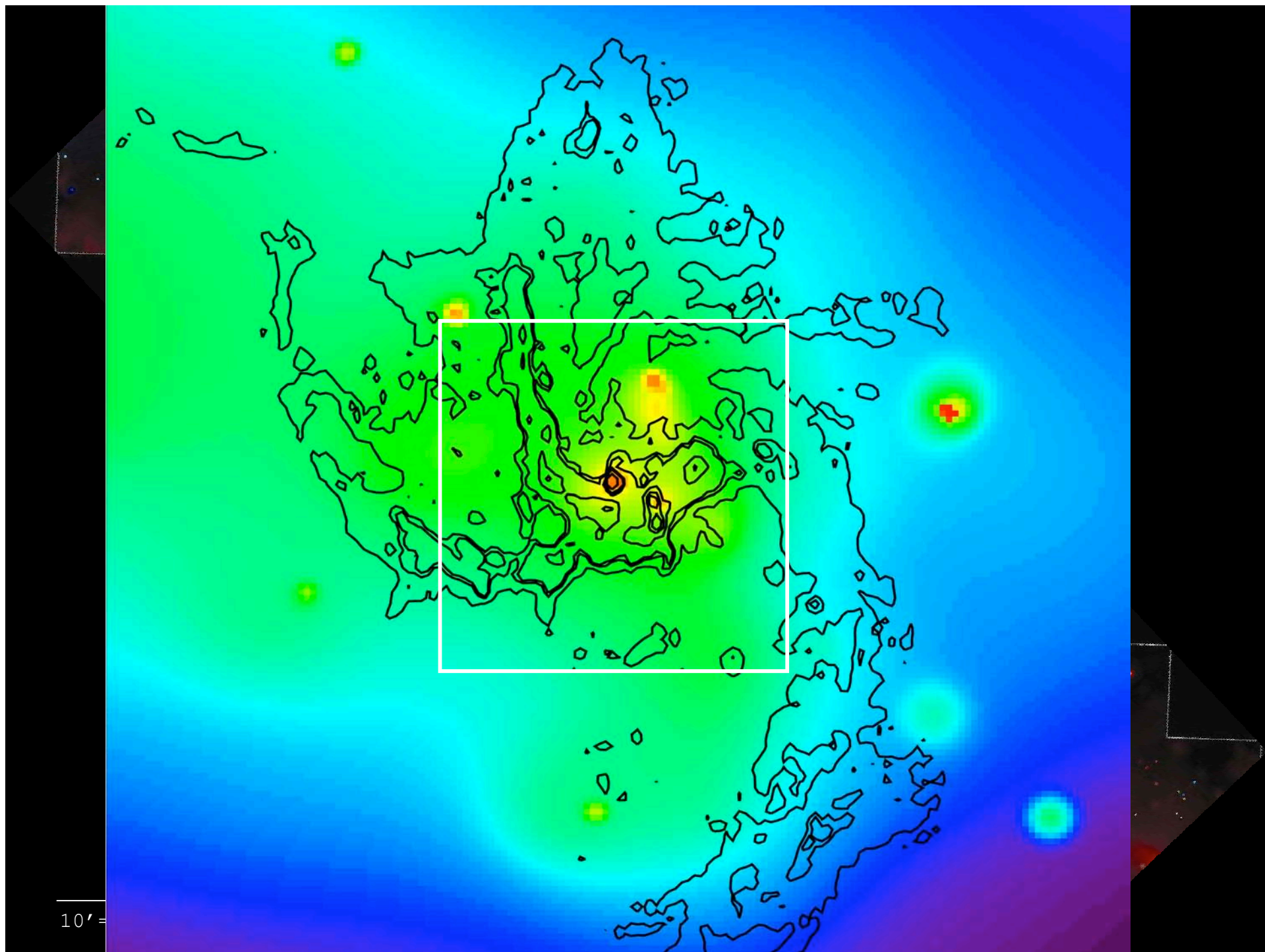
Sgr E

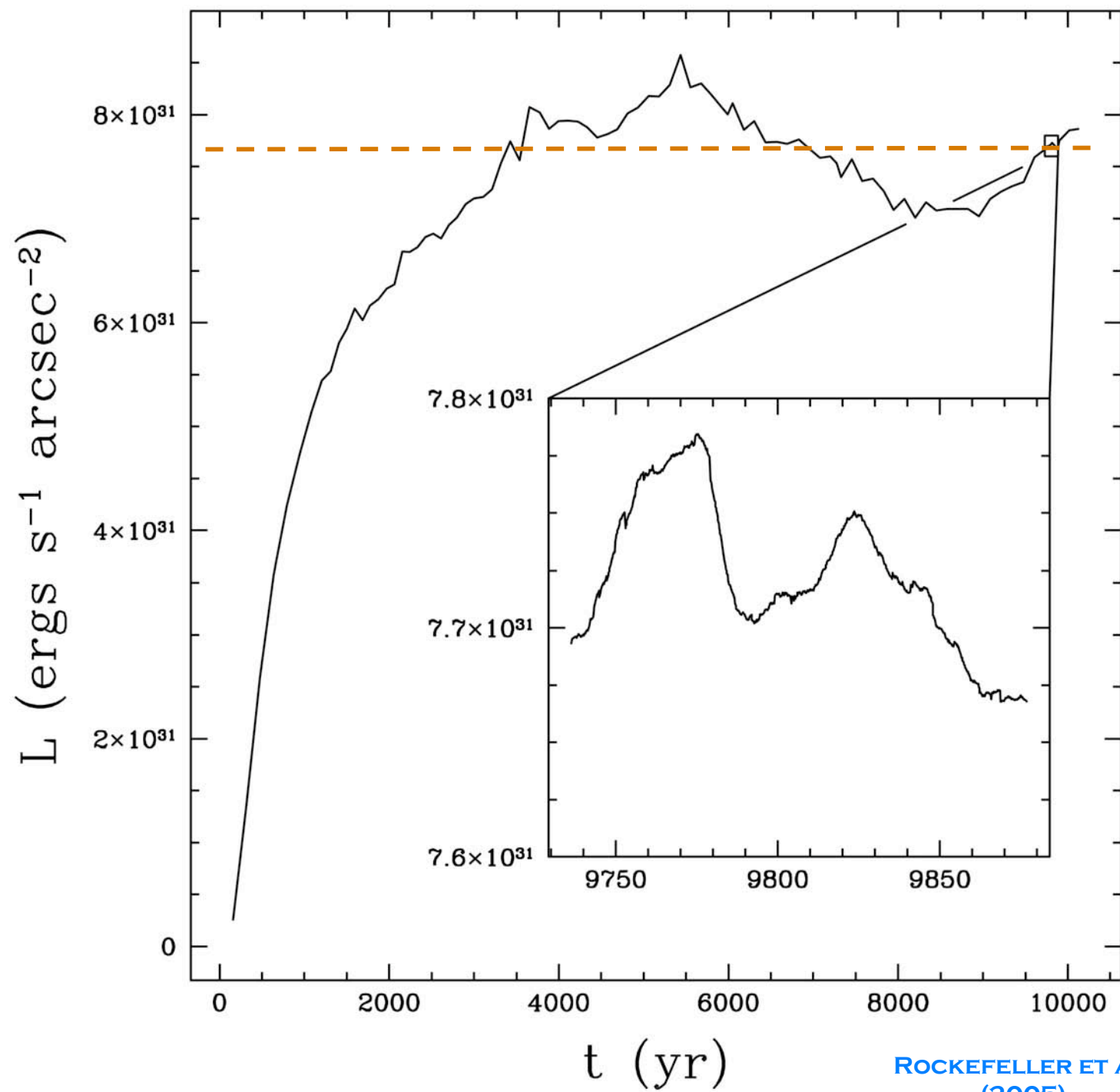
SNR 359.1-00.5

(Lo & Yusef-Zadeh 1996)

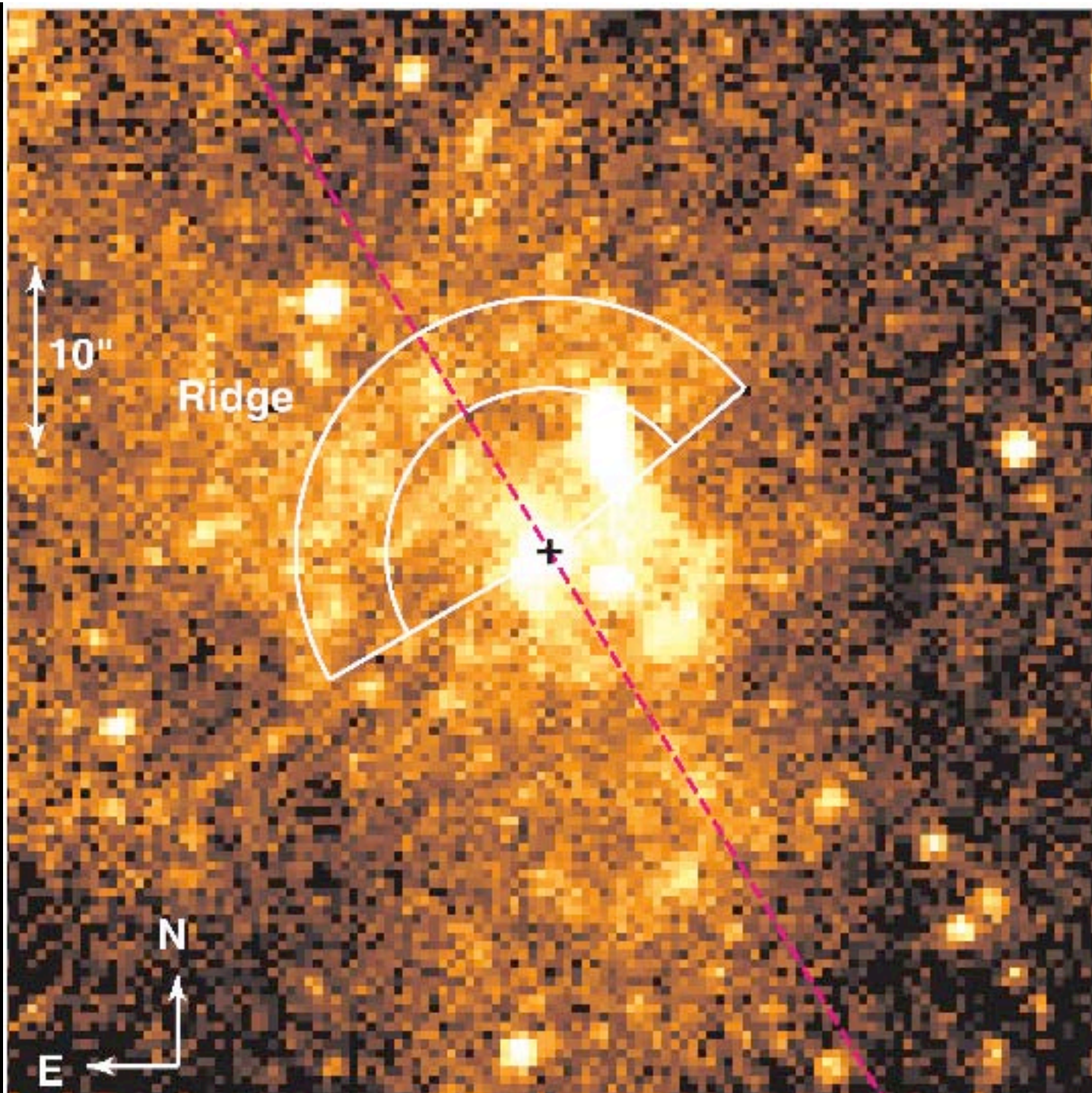
(Kassim et al. 1999)

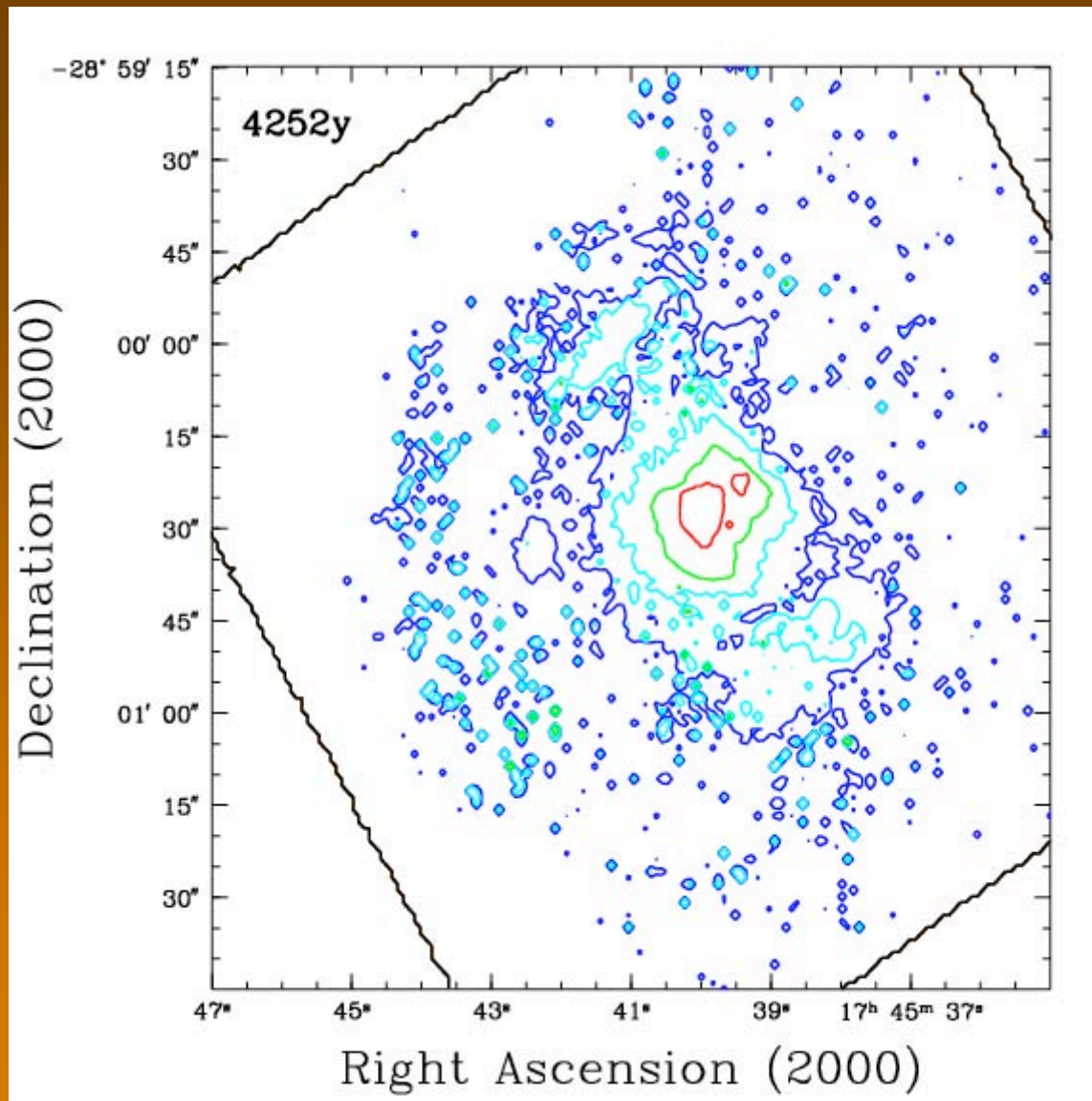


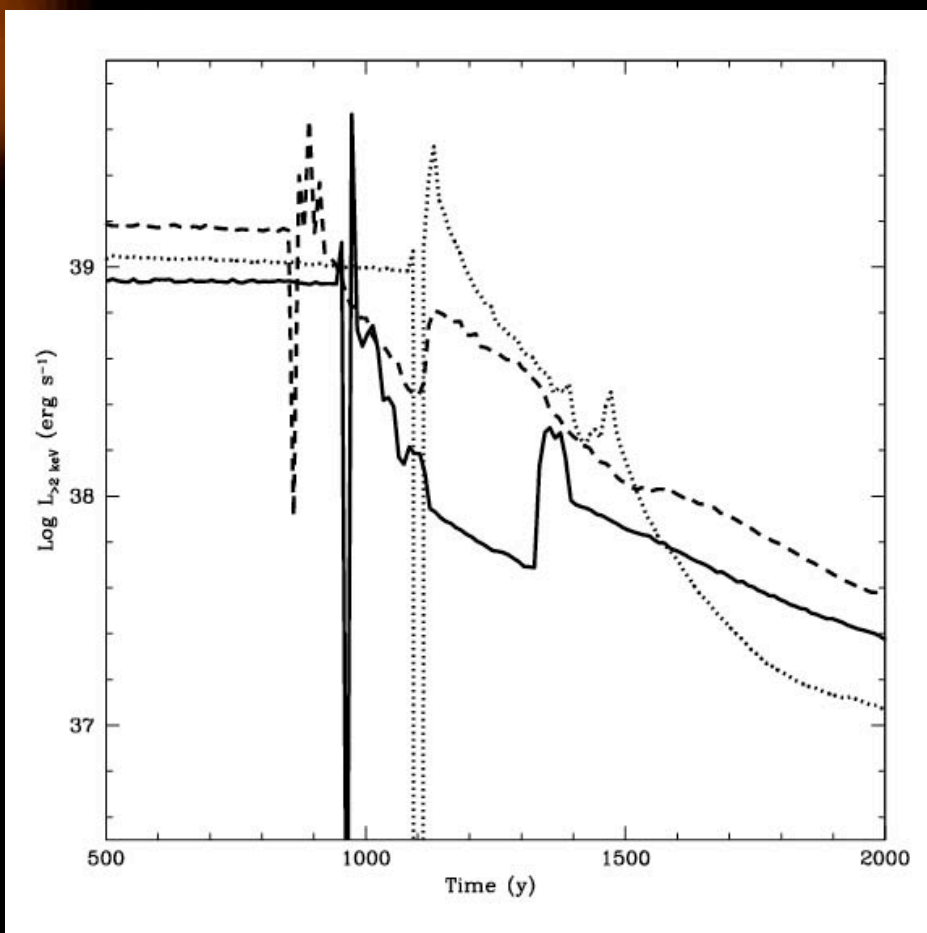
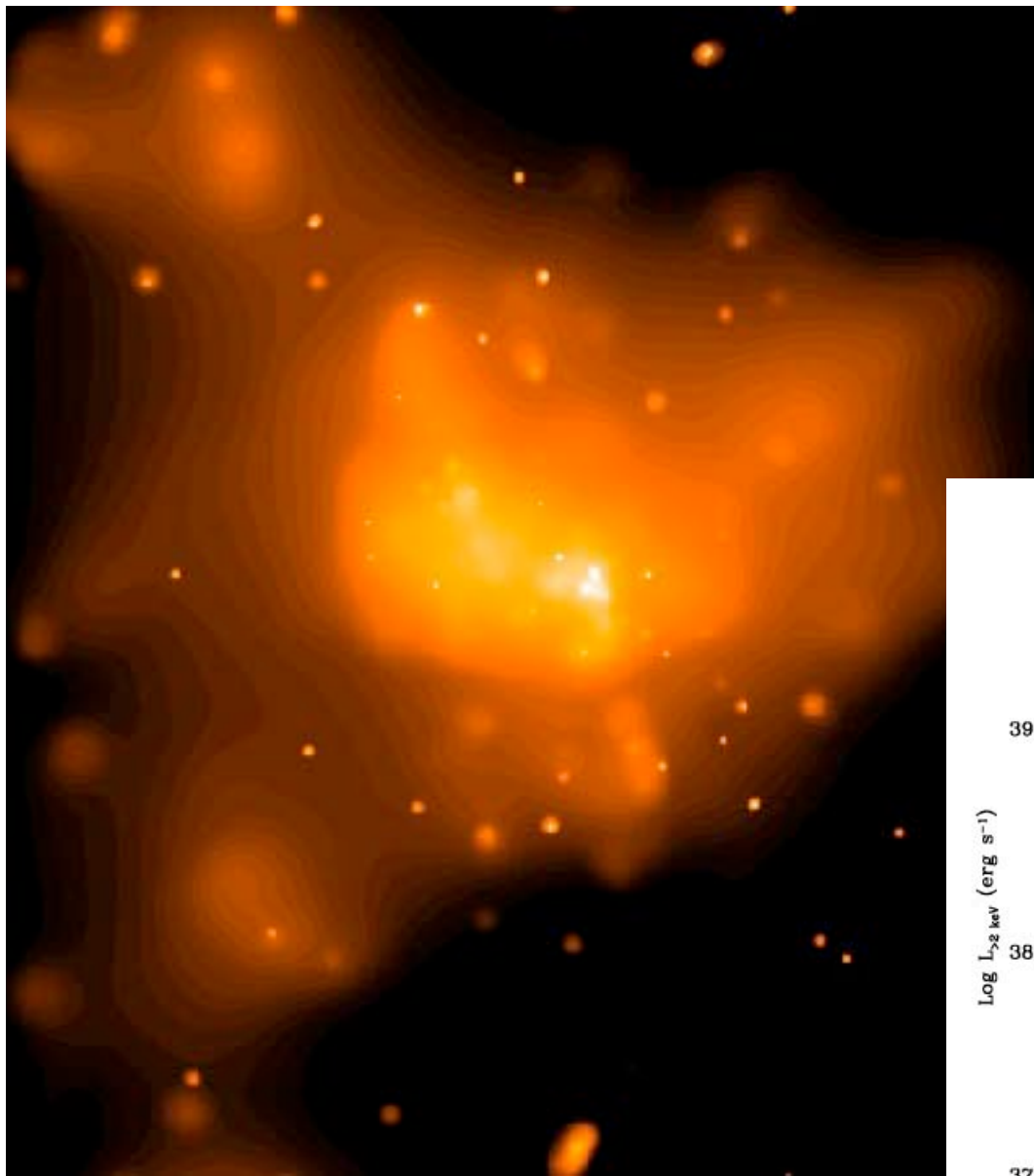


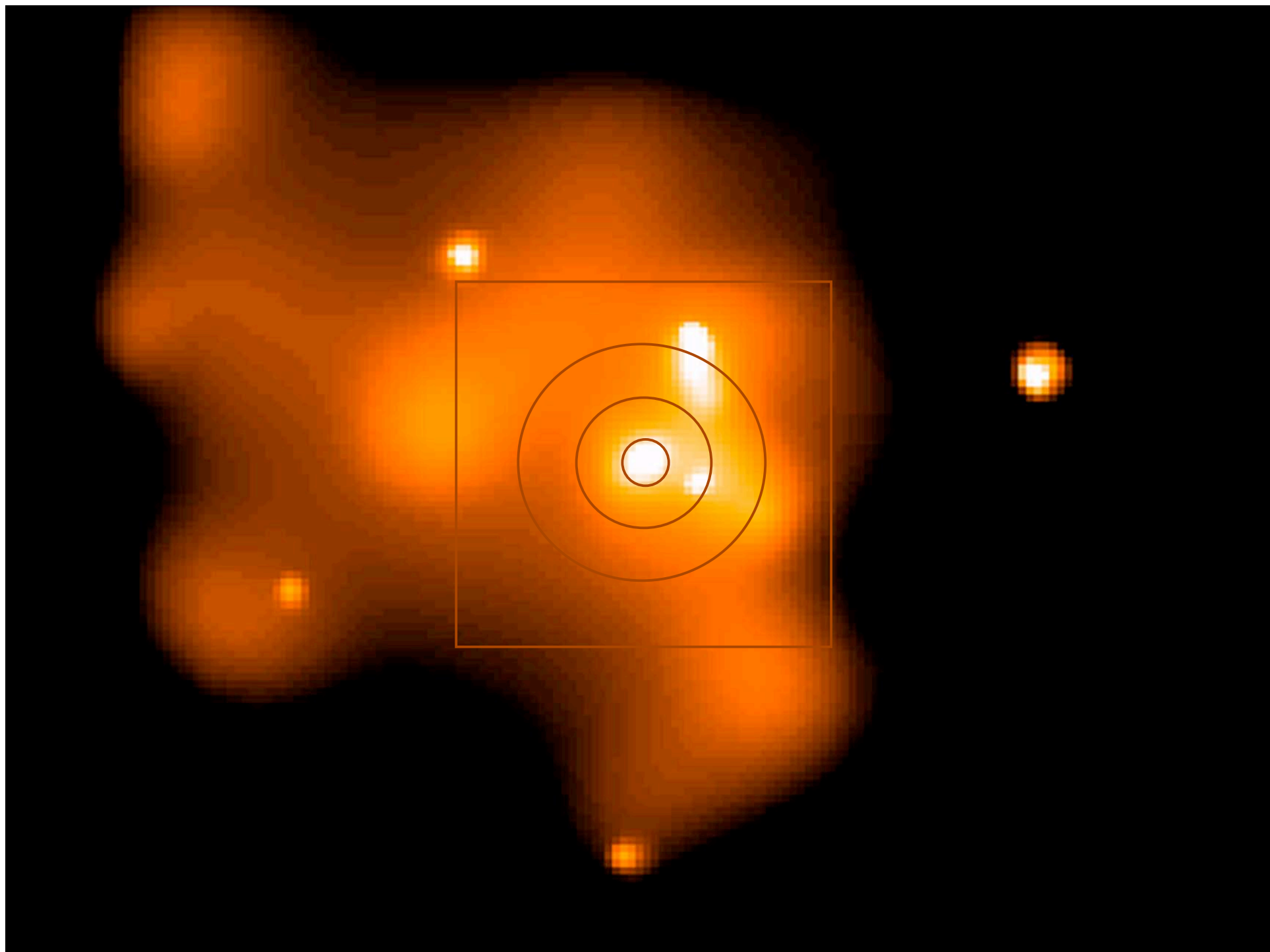


ROCKEFELLER ET AL.
(2005)



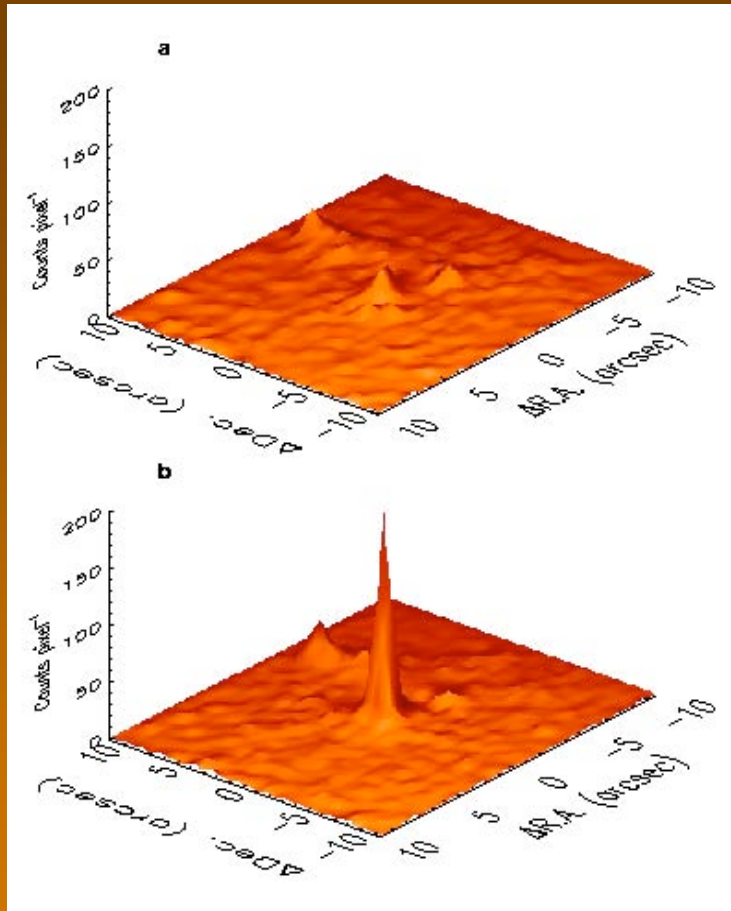




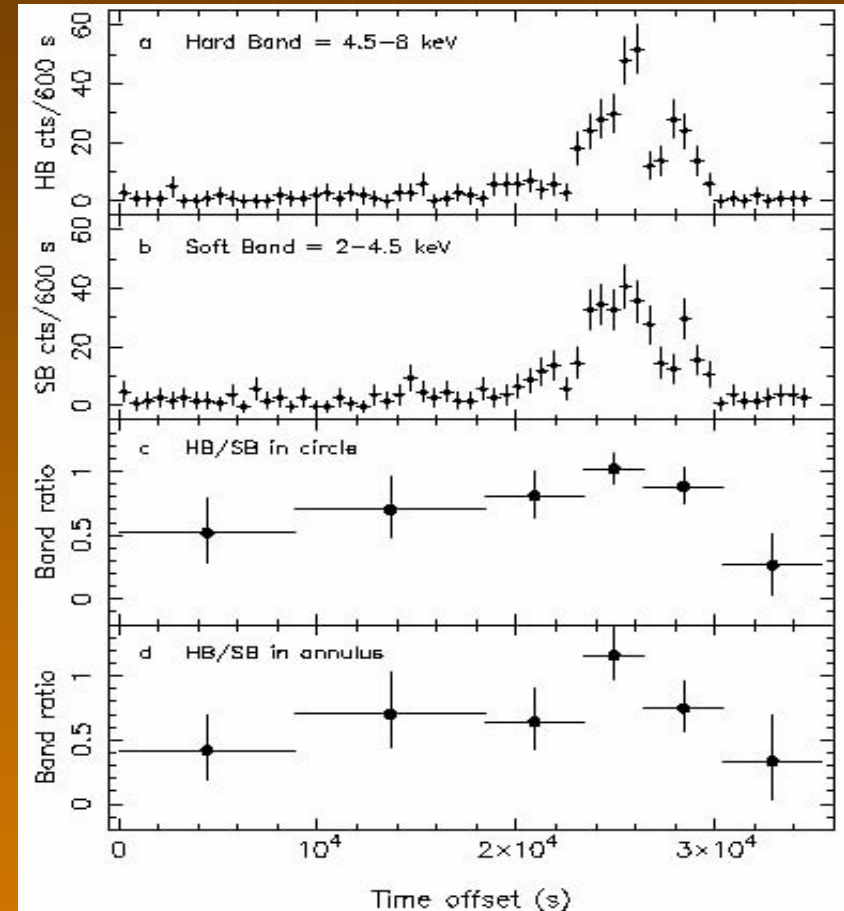


X-ray Flares from Sgr A*

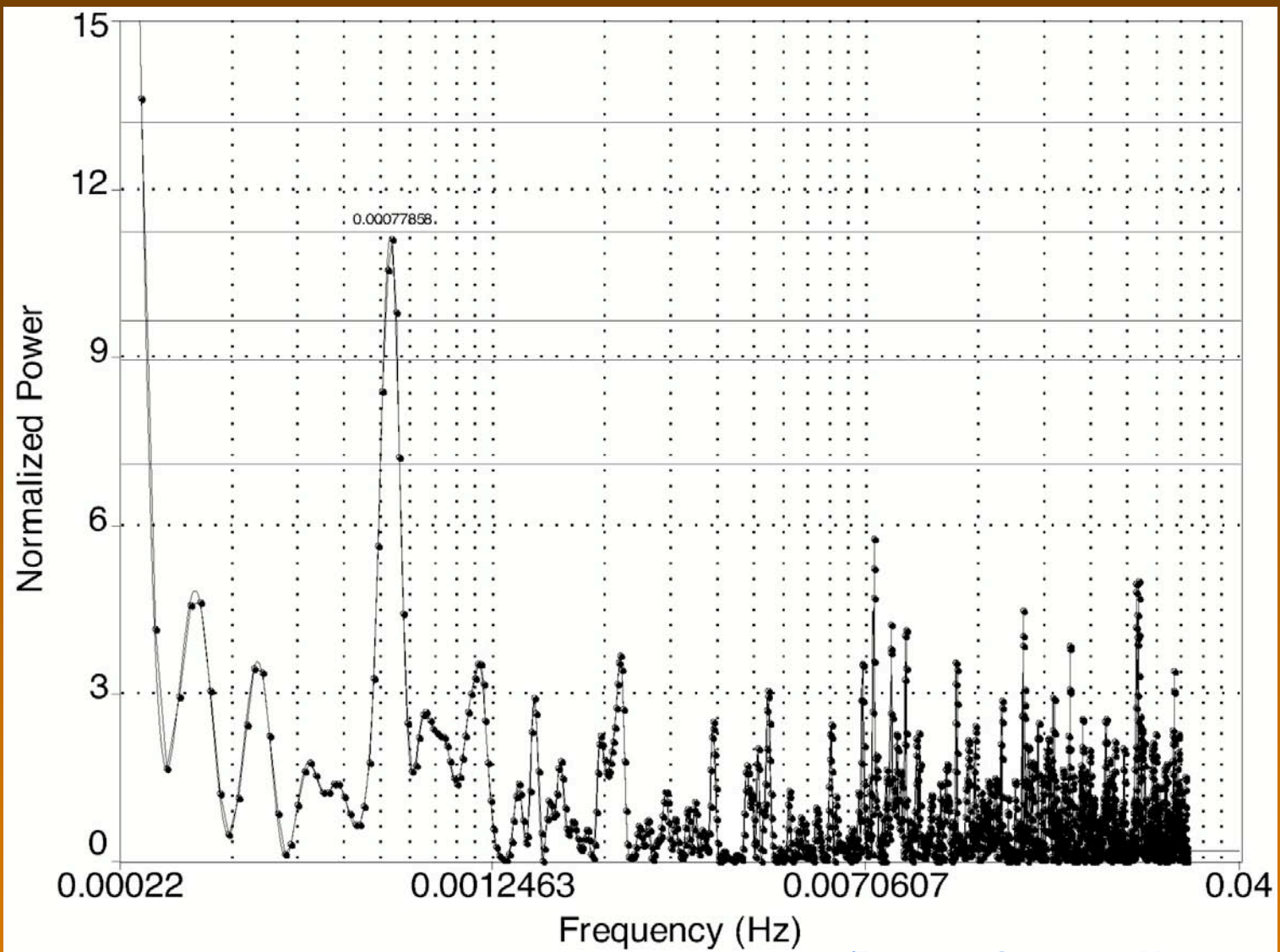
(Baganoff et al. 2001)



During a flare, Sgr A*'s X-ray luminosity can increase by more than one order of magnitude.

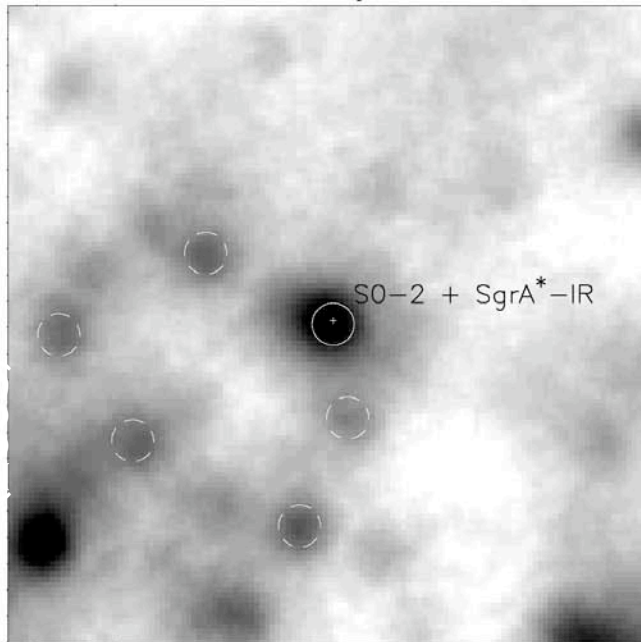


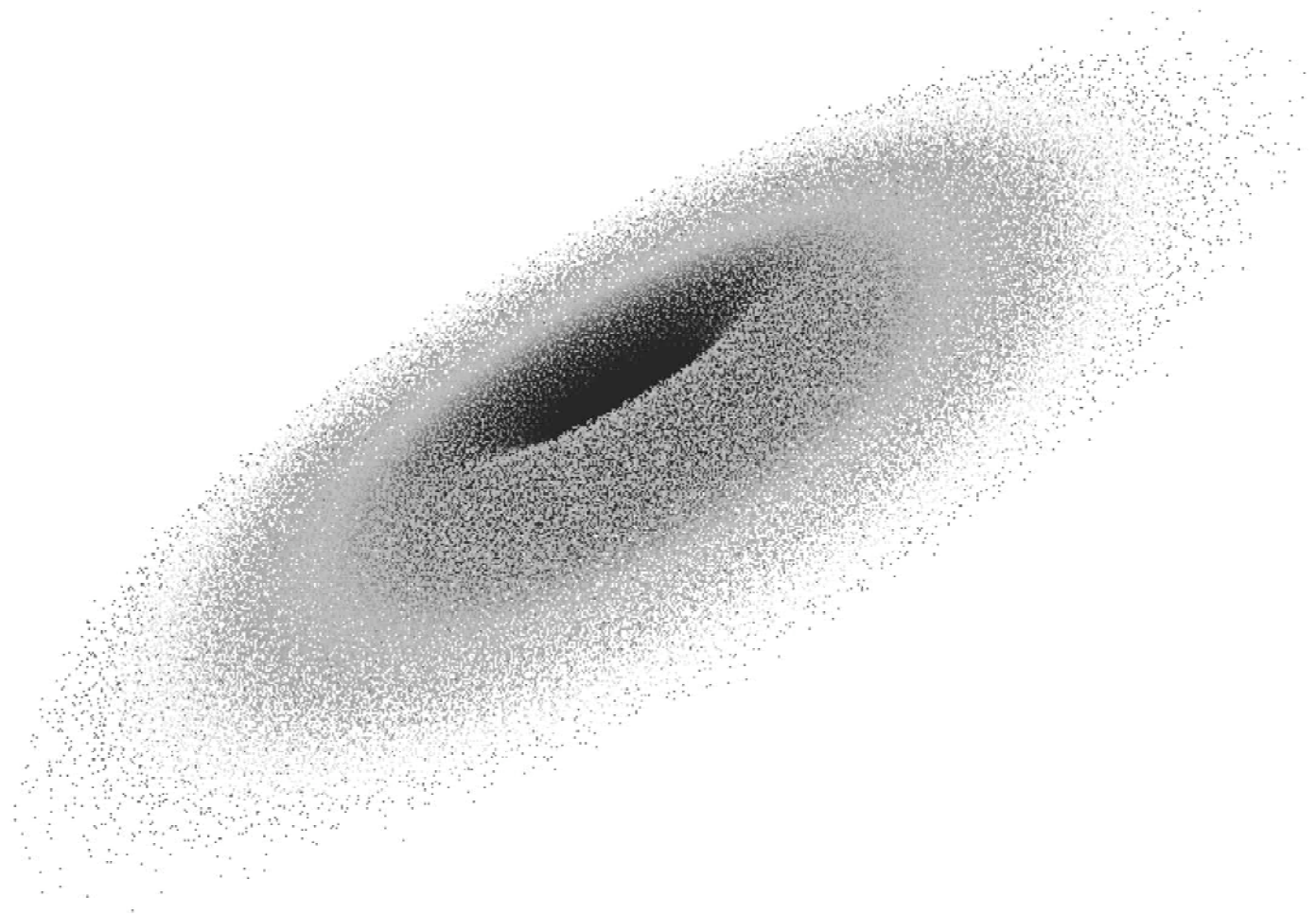
This X-ray flare lasted a few hours. Significant variation in flux was observed over 10 minutes.



(BELANGER, GOLDWURM, MELIA ET
AL. 2005)

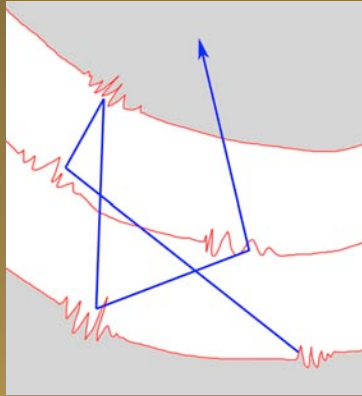
2002 May 31





(MINUTES)

ROCKEFELLER, FRYER &
MFI IA (2005)

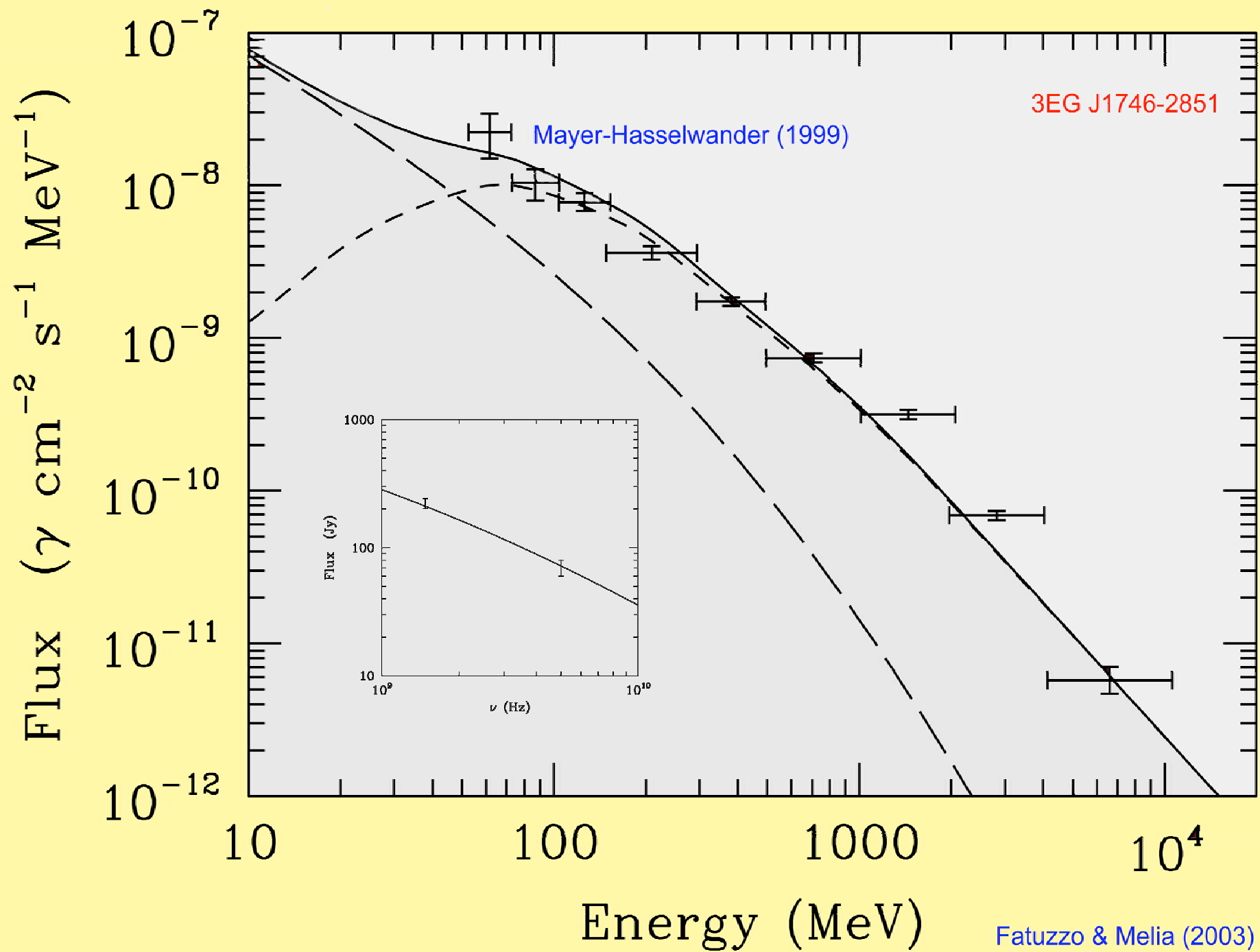


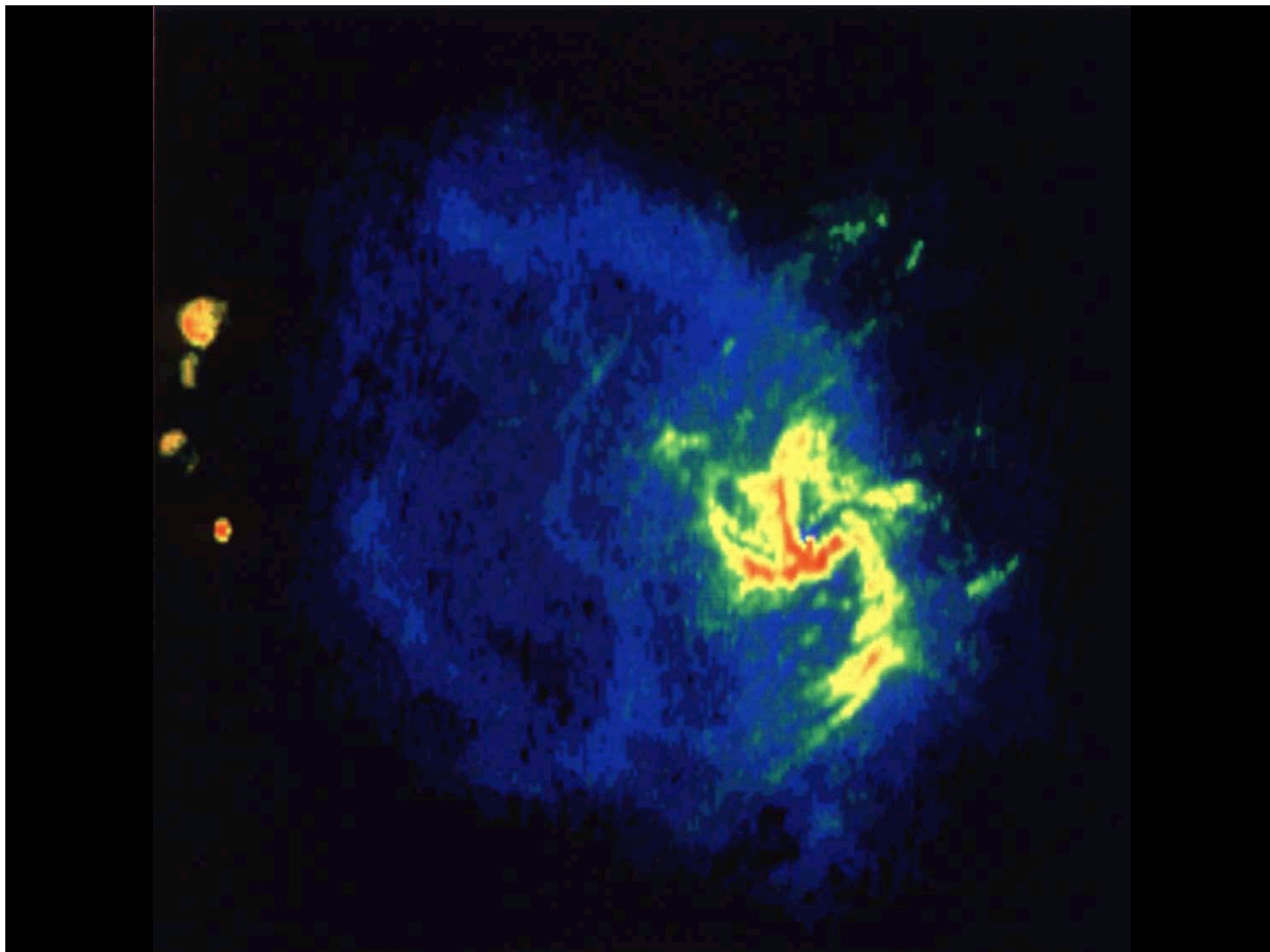
THE PARTICLE DISTRIBUTION

**THE MM, IR, AND X-RAY SPECTRAL COMPONENTS
APPARENTLY
ARISE IN A PARTIALLY SELF-ABSORBED, ORBITING MEDIUM,
PRODUCED BY A HOT ($T \sim 10^{10} - 10^{11}$ K) MODIFIED
MB
PLASMA WITH NON-THERMAL PARTICLES.**

**GIVEN THE SUSPECTED ENVIRONMENT, AN OBVIOUS
PROCESS TO CONSIDER
IS STOCHASTIC ACCELERATION OF PARTICLES
INTERACTING RESONANTLY
WITH PLASMA WAVES OR TURBULENCE
GENERATED VIA AN MHD
DISSIPATION PROCESS (LIU, PETROSIAN, & MELIA
2004, 2005).**

**ALSO, SOME ELECTRONS (AND PROTONS) DIFFUSE OUT TO
LARGER RADII WHERE THEY PRESUMABLY PRODUCE THE CM
RADIO SPECTRUM — AND POSSIBLY THE NEW HESS/INTEGRAL
SOURCE. IT SHOULD ALSO BE DETECTABLE WITH GLAST.**





Sagittarius A*

